



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<b>(21) International Application Number:</b> PCT/GB00/01633  <b>(22) International Filing Date:</b> 27 April 2000 (27.04.00)  <b>(30) Priority Data:</b> 9909796.6                      28 April 1999 (28.04.99)                      GB  <b>(71) Applicant (for all designated States except US):</b> PLANT BIOSCIENCE LIMITED [GB/GB]; Norwich Research Park, Colney Lane, Norwich, Norfolk NR4 7UH (GB).  <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> <u>CHRISTOU</u> , Paul [US/GB]; 38 Glenalmond, Norwich NR4 6AG (GB). MEHLO, Luke [ZW/ZW]; <u>SIRDC</u> , Box 6640, Harare (ZW).  <b>(74) Agents:</b> KREMER, Simon, M. et al.; Mewburn Ellis, York House, 23 Kingsway, London WC2B 6HP (GB).		<b>(81) Designated States:</b> AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>Without international search report and to be republished upon receipt of that report.</i>
<b>(54) Title:</b> PESTICIDAL FUSIONS  <b>(57) Abstract</b>  <p>Disclosed are nucleic acid molecules encoding a pesticidal fusion polypeptide comprising (i) a toxin domain; and (ii) a heterologous binding domain capable of binding non-specifically to a cell membrane without disrupting that membrane. Preferably the toxin domain is derived from a <i>Bacillus thuringiensis</i> cry toxin (e.g. CryIA(b) or (c)) and the binding domain is derived from a lectin (e.g. ricin toxin B chain). The use of such fusions may help to inhibit the acquisition of resistance in a pest population treated with the polypeptide. Also disclosed are method and materials for producing and using the nucleic acids and polypeptides encoded thereby. Also vectors (e.g. baculovirus vectors or a vectors suitable for us in a plant), host cells, and plants etc. A further aspect of the invention is a method of assessing the toxicity of a polypeptide to a pest species comprising: (i) introducing a nucleic acid encoding said polypeptide into a host cell from that species, (ii) causing or allowing the nucleic acid to be expressed in a host cell from that species, (iii) observing the viability of the cell and correlating the results of the observation with the toxicity of the polypeptide, wherein the viability is determined by assessing esterase activity or membrane integrity.</p>		